

(19) World Intellectual Property
Organization
International Bureau



550425

(43) International Publication Date
7 October 2004 (07.10.2004)

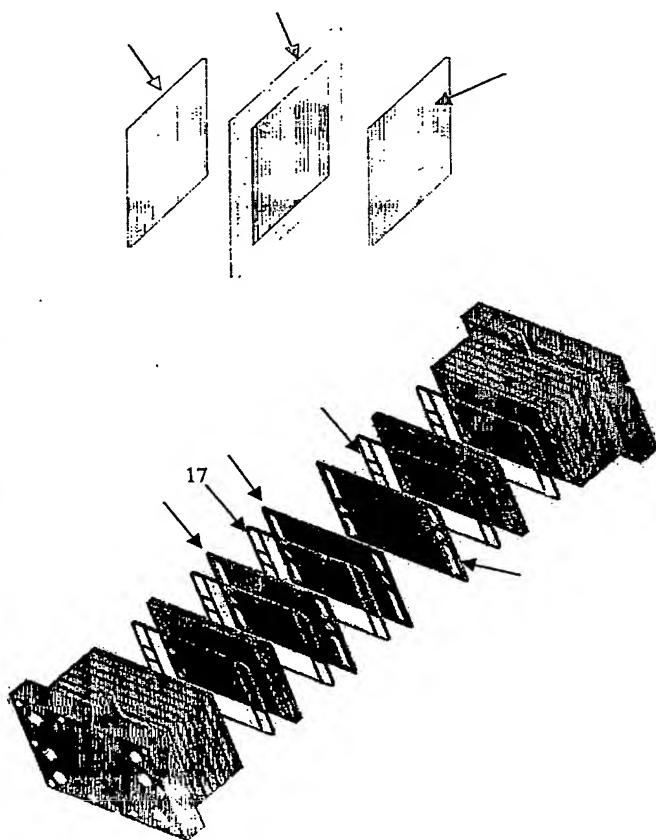
PCT

(10) International Publication Number
WO 2004/086541 A2

- (51) International Patent Classification⁷: **H01M 8/02**
- (21) International Application Number:
PCT/CA2004/000436
- (22) International Filing Date: 24 March 2004 (24.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/457,459 25 March 2003 (25.03.2003) US
- (71) Applicant (for all designated States except US): **DUPONT CANADA INC.** [CA/CA]; 7070 Mississauga Road, Mississauga, Ontario L5M 2H3 (CA).
- (71) Applicant and
(72) Inventor: **BATES, Phil** [CA/CA]; 4560 Davidson Road, RR #1, Inverary, Ontario K0H 1X0 (CA).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **ANDRIN, Peter** [CA/CA]; 34 Sarah Street, Napanee, Ontario K7R 3X4 (CA). **CHOUDHURY, Biswajit** [CA/CA]; 1005 - 175 Bath Road, Kingston, Ontario K7M 7K9 (CA). **GHOSH, Kalyan** [IN/CA]; 509 - 247 Bath Road, Kingston, Ontario K7M 2X9 (CA). **HOOPER, Mike** [CA/CA]; 80 Princess Street, Apt. #5, Kingston, Ontario K7L 1A5 (CA).
- (74) Agents: **CLARIZIO, Dino, P. et al.**; Bennett Jones LLP, 3400 1 First Canadian Place, P.O. Box 130, Toronto, Ontario M5X 1A4 (CA).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

(54) Title: INTEGRATED ELECTRICALLY CONDUCTIVE ELECTROCHEMICAL CELL COMPONENT



(57) Abstract: An electrically conductive electrochemical cell component is disclosed. The cell component includes a first coolant plate and an adjacent plate, wherein the adjacent plate is a second coolant plate or a bipolar plate. The first coolant plate has at least one mating region, preferably a rib, for mating with a complementary region, preferably a groove, on the adjacent plate. The first coolant plate and the adjacent plate are each made of a polymer and conductive filler blend. The first coolant plate is joined to the adjacent plate by a seal formed by the polymer at the mating region and the complementary region. The seal is created using vibrational or resistive welding processes.

WO 2004/086541 A2



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.